

# AFCTN Test Report 94-009

# **AFCTB-ID 93-059**



**Technical Publication Transfer** 

Using:



**Data Conversion Laboratory's Data** 



MIL-D-28000A (IGES) MIL-M-28001A (SGML) MIL-R-28002A (Raster) MIL-D-28003 (CGM)

**Quick Short Test Report** 

07 June 1993

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Electronic Systems Center

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# Technical Publication Transfer Using: Data Conversion Laboratory's Data

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MIL-M-28001A (SGML)
MIL-R-28002A (Raster)
MIL-D-28003 (CGM)

Quick Short Test Report 07 June 1993

**Prepared By** 

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#### 1. Introduction

### 1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-Cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. ticipants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased The results of informal tests are confidence in them. reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

### 1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Data Conversion Laboratory's interpretation and use of the CALS standards in transferring technical publication data. This test is part of the AFCTB SGML Transfer Demonstration. Data Conversion Laboratory used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

# 2. Test Parameters

Test Plan:

AFCTB 93-059

Date of

Evaluation:

7 June 1993

Evaluator:

George Elwood

Air Force CALS Test Bed

DET 2 HQ ESC/ENCP

4027 Colonel Glenn Hwy

Suite 300

Dayton OH 45431-1672

Data

Originator:

Michael Gross

Data Conversion Laboratory

184-13 Horace Harding Expressway

Fresh Meadows NY 11365 (718) 357-8700 X 36

Data

Description:

Technical Manual Test

1 Document Declaration file

1 Document Type Definition (DTD)

1 Initial Graphics Exchange Standard

(IGES) file

1 Text file

5 Raster files

3 Computer Graphics Metafile (CGM) files

Data

Source System:

1840

HARDWARE

Unknown

SOFTWARE

Unknown

IGES

HARDWARE

Unknown

SOFTWARE

Unknown

#### Text/Standard Generalized Markup Language (SGML)

HARDWARE

Unknown

SOFTWARE

Unknown

Raster

HARDWARE

Unknown

SOFTWARE

Unknown

CGM

HARDWARE

Unknown

SOFTWARE

Unknown

#### Evaluation Tools Used:

#### MIL-STD-1840A (TAPE)

SUN 3/280

AFCTN Tapetool v1.2.9 UNIX

XSoft CAPS/CALS v40.4

Texas Instruments (TI) Tapetool v1.0.1

PC 486/50

AFCTN Tapetool v1.2.9 DOS

#### MIL-D-28000 (IGES)

Sun SparcStation 2

ArborText iges2draw

Carberry CADLeaf Plus v3.1

IGES Data Analysis (IDA) Parser/Verifier v92

IDA *IGESView v3.05* 

PC 486/50

AUTODESK AutoCAD 386 R12 IDA IGESView Windows

#### MIL-M-28001 (SGML)

SUN SparcStation 2

ArborText ADEPT v4.2.1

PC 486/50

Datalogics ParserStation v3.36 Exoterica XGMLNormalizer v1.2e3.2

Exoterica Validator v2.0 EXL

McAfee & McAdam Mark-it v2.3 Public Domain sgmls

#### MIL-R-28002 (Raster)

SUN SparcStation 2

ArborText g42tiff

Carberry CADLeaf Plus v3.1

AFCTN validg4

AFCTN calstb.475

IDA IGESView v3.0

Island Graphics IslandPaint v3.0

#### PC 486/50

AFCTN validg4

IDA IGESView Windows

Inset Systems HiJaak v2.1

Inset Systems HiJaak Window v1.0

Corel Ventura Publisher

#### MIL-D-28003 (CGM)

SUN SparcStation 2

ArborText cgm2draw

Island Graphics IslandDraw v3.0

Carberry CADLeaf Plus v3.1

#### PC 486/50

Software Publishing Corporation

(SPC) Harvard Graphics v3.05

Inset Systems HiJaak v2.1

Inset Systems HiJaak v1.0 Windows

Micrografx Designer v3.1

Micrografx Charisma v2.1

Corel Ventura Publisher

# Standards Tested:

MIL-STD-1840A

MIL-D-28000A

MIL-M-28001A

MIL-R-28002A

MIL-D-28003

### 3. 1840A Analysis

### 3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was not marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was not enclosed in a barrier bag or barrier sheet material as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed a label indicating the recording density, as required by MIL-STD1840A, para. 5.3.1. A packing list showing all files recorded on the tape was not included.

#### 3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

#### 3.2.1 Tape Formats

The tape was run through the AFCTN Tapetool v1.2.9 utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was read using XSoft's CAPS read1840A utility without any reported errors.

The tape was read using TI's Tapetool v1.0.1 with no reported errors.

While the tape had no reported errors, a missing end of file coding was discovered in one CGM file. This caused the file to fail the evaluation. The source of the error was incorrect padding at the end of the CGM file.

The physical tape structure does not meet the CALS MIL-STD-1840A requirements.

#### 3.2.2 Declaration and Header Fields

No errors were found in the Document Declaration file and data file headers.

This portion of the tape meets the CALS MIL-STD-1840A requirements.

#### 4. IGES Analysis

The tape contained one IGES file. This file was evaluated using IDA's parser and verifier set for CALS Class I. This utility reported that the file meets the CALS MIL-D28000A specification. The file was checked and it was found to be the same as the file sent out on the initial AFCTB tape.

The AFCTB has several tools for viewing IGES files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file was converted using ArborText's *iges2draw* utility with no reported errors. The resulting file was read into Island Graphics' *IslandDraw*, displayed and printed without a reported error.

The file was read into Carberry's CADLeaf software without a reported error.

The file was read using IDA's *IGESView* and *IGESView* for *Windows* without a reported error.

The IGES file meets the CALS Class I, MIL-D-28000A specification.

#### 5. SGML Analysis

The AFCTB has several parsers available for evaluating submitted DTD and Text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. Changes to DTD or Text files required by each system are not documented in the report.

The Text and DTD files from the tape were evaluated using Datalogics' ParseStation without a reported error.

The Text and DTD files from this document were evaluated using Exoterica's *Validator exl* parser without a reported error.

The Text and DTD files from this document were tested using Exoterica's XGMLNormalizer parser without a reported error.

The Text and DTD files from the tape were evaluated using McAfee & McAdam's Mark-it parser without a reported error.

The Text and DTD files from the tape were evaluated using the Public Domain sgmls parser without a reported error.

The Text and DTD files from the tape were evaluated using SoftQuad's Author/Editor parser without a reported error.

The Text file was imported into ArborText's Adept software and published. A copy of the title page and the added story is included in the Appendix to this report. It was noted that the SGML participant table was not updated. Data Conversion Laboratory did add text to the SGML story.

The SGML files meet the CALS MIL-M-28001A specification.

## 6. Raster Analysis

The tape contained five (5) Raster files. All 5 files were evaluated using the AFCTN validg4 utility. This program reported that all 5 files meet the CALS MIL-R-28002A specification. The files were also compared with the ones sent initially, they were found to be the same.

The files were read into the AFCTN calstb.475 viewing utility. No problems were noted.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The files were converted using ArborText's g42tiff utility without a reported error. The resulting files were read into Island Graphics' IslandPaint, displayed and printed.

The Raster files were read into Carberry's CADLeaf software without a reported error. The images were displayed.

The files were read into IDA's IGESView and IGESView for Windows without a reported error.

The files were read into Inset Systems' HiJaak for Windows without a reported error.

The files were converted using Inset Systems' HiJaak for DOS into an IMG format without a reported error. The resulting files were read into Corel's Ventura Publisher, displayed and printed.

The Raster files were converted using Rosetta Technologies' *Prepare* without a reported error. The resulting files were read into *Preview*, displayed and printed.

The Raster files meet the CALS MIL-R-28002A specification.

#### 7. CGM Analysis

The tape contained three (3) CGM files. The files were evaluated using a software available within the AFCTB with CALS options. This utility reported that files D001C006 and D001C007 did not meet the CALS specification. The errors were traced to errors in the tape structure, where the files were not padded to the correct length. The end of file coding was dropped causing the errors. File D001C005 was found to be exactly the same as the CGM file that left the AFCTB.

The AFCTB has several tools for viewing CGM files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor and indication of CALS capability. All operations were performed using the default settings.

The CGM files were converted using ArborText's cgm2draw utility without a reported error except for D001C006 which reported a premature end of file. The resulting files were read into Island Graphics' IslandDraw, displayed and printed.

The files were viewed using another software available within the AFCTB. All 3 files had reported errors although all displayed on the screen. File D001C006 was reported with a premature end of file.

The files were read into Carberry's *CADLeaf* software and displayed. File D001C006 hung the system after displaying the image on the screen while the other two file had no reported errors.

The files were read into Inset Systems' HiJaak for Windows without a reported error. All 3 files were displayed with no reported errors.

The files were imported directly into Island Graphics' *IslandDraw* without a reported error. All 3 files were displayed without a problem.

The files were imported into the Micrografx Designer and Charisma without a reported error. File C006 would not import into either application.

According to Michael Harrison of Micrografx, "The version of Micrografx Designer used with this report has been replaced with Designer version 4.0 which reads and prints these files successfully."

The files were imported into SPC's Harvard Graphics 3.05 without a reported error except for file C006. This file was reported as not being a valid file.

The files were imported into Corel's *Ventura Publisher*. Files C005 and C007 were imported without error while C006 would not import. File C005 displayed with noted errors.

The CGM files do not meet the CALS MIL-D-28003 specification.

DATA CONVERSION LABORATORY COMMENTS: "Data Conversion Laboratory did not modify any data file except to SGML Text file. We rewrote to files without change."

#### 8. Conclusions and Recommendations

The tape submitted by Data Conversion Laboratory did not have any reported errors in the physical structure or CALS headers. They meet the CALS MIL-STD-1840A requirements.

The IGES file on the tape meets the CALS MIL-D-28000A specification.

The SGML files meet the CALS MIL-M-28001A specification.

The Raster files meet the CALS MIL-R-28002A specification.

The CGM files do not meet the CALS MIL-D-28003 specification. The error was traced to a missing EOF coding caused during the tape write procedure.

Because of the reported errors in the CGM files, the tape does not meet the CALS MIL-STD-1840A requirements.

# 9. Appendix A - Tapetool Report Logs

# 9.1 Tape Catalog

CALS Test Network Catalog Evaluation - Version 1.2; Release 9 (O)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes for Information Interchange ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Fri Jun 4 11:30:26 1993

MIL-STD-1840A File Catalog

File Set Directory: /cals/u129/Set012

Page: 1

		Record		
		Format/	Block	Selected/
File Name	File Type	Length	Length/Total	Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D001C005	CGM	F/00080	00800/000040	Extracted
D001C006	CGM	F/00080	00800/000085	Extracted
D001C007	CGM	F/00080	00800/000011	Extracted
D001G002	DTD	D/00260	02048/000019	Extracted
D001H003	Output Specification	D/00260	02048/000042	Extracted
D001Q004	IGES	F/00080	02000/000195	Extracted
D001R008	Raster	F/00128	02048/000007	Extracted
D001R009	Raster	F/00128	02048/000005	Extracted
D001R010	Raster	F/00128	02048/000015	Extracted
D001R011	Raster		02048/000006	Extracted
D001R012	Raster		02048/000004	Extracted
D001T001	Text		02048/000020	Extracted

Catalog Process terminated normally.

# 9.2 Tape Evaluation Log

CALS Test Network Tape Evaluation - Version 1.2; Release 9 (0)
Standards referenced:
ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
for Information Interchange
ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Fri Jun 4 11:30:01 1993

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1CALS01

Label Identifier: VOL1
Volume Identifier: CALS01
Volume Accessibility:

Owner Identifier:

Label Standard Version: 4

HDR1D001

CALS0100010001000000 93140 00000 000000

Label Identifier: HDR1 File Identifier: D001

File Set Identifier: CALS01 File Section Number: 0001 File Sequence Number: 0001 Generation Number: 0000

Generation Version Number: 00

Creation Date: 93140 Expiration Date: 00000 File Accessibility: Block Count: 000000

Implementation Identifier:

HDR2D0204800260

00

Label Identifier: HDR2 Recording Format: D Block Length: 02048 Record Length: 00260 Offset Length: 00

\*\*\*\*\*\*\* Tape Mark \*\*\*\*\*\*\*\*\* Actual Block Size Found = 2048 Bytes. Number of data blocks read = 1. \*\*\*\*\*\*\*\* Tape Mark \*\*\*\*\*\*\*\*\* EOF1D001 CALS0100010001000000 93140 00000 000001 Label Identifier: EOF1 File Identifier: D001 File Set Identifier: CALS01 File Section Number: 0001 File Sequence Number: 0001 Generation Number: 0000 Generation Version Number: 00 Creation Date: 93140 Expiration Date: 00000 File Accessibility: Block Count: 000001 Implementation Identifier: EOF2D0204800260 00 Label Identifier: EOF2 Recording Format: D Block Length: 02048 Record Length: 00260 Offset Length: 00 \*\*\*\*\*\*\* Tape Mark \*\*\*\*\*\*\*\*\* <<<< PART OF LOG REMOVED HERE >>>> \*\*\*\*\*\*\* Tape Mark \*\*\*\*\*\*\*\*\* ########## End of Volume CALS01 ############## ########## End Of Tape File Set ############### Deallocating /dev/rmt0...

Tape Import Process terminated normally.

### 9.3 Tape File Set Validation Log

CALS Test Network File Set Evaluation - Version 1.2; Release 9 (O)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Fri Jun 4 11:30:26 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set012

Found file: D001

srcsys: Air Froce CALS Test Bed

srcdocid: Air Force CALS Test Bed CALS EXPO SGML Demonstration

srcrelid: NONE

chqlvl: ORIGINAL 1 19930326

dteisu: 19930326

dstsys: Data Conversion Lab, 184-13 Horace Harding Expwy, Freshmeadows, NY 11365

dstdocid: CALS Expo SGML Demonstration

dstrelid: NONE dtetrn: 19930511 dlvacc: NONE

filcnt: C3,G1,H1,Q1,R5,T1 ttlcls: UNCLASSIFIED doccls: UNCLASSIFIED

doctyp: Technical Manual

docttl: SGML TRANSFER DEMONSTRATION

<><< PART OF LOG REMOVED HERE >>>>

Evaluating numbering scheme ...

No errors were encountered during numbering scheme evaluation. Numbering scheme evaluation complete.

Checking file count...

No errors were encountered during file count verification. File Count verification complete.

No errors were encountered in Document D001.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

# 10. Appendix B - Published Pages

# EXPO92 DEMO

# TECHNICAL MANUAL Sample Text

# IGES TRANSFER MANUFACTURING DEMONSTRATION SGML TRANSFER DEMONSTRATION

Air Force CALS Test Bed SGML Transfer Demonstration





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EXPO92 DEMO

#### CHAPTER 3

#### The SGML Transfer Story

#### 3.1 Part One - The Start

It was a dark and rainy night. Edna sat in front of her computer terminal, lines of care etched into her young, care-worn face. Knowing full well, even as she began to enter her confession into the IWSDB, that she would be subject to questions from higher authority, maybe even the MAISRC. She crouched over her care-worn keyboard and started to enter her tale. She had agonized long and hard before making this decision, fearing the wrath of the CALS ISG committee on The Suppression of Overblown Phrases. Finally she began to type the name(s) of the guilty person(s). Just as she was about to run a spell check on the list(s) of government(s) agencies a shadow appeared from over her shoulder, blanking out the blanked-out portion of the screen and she knew that the guilty person(s), or significant other(s), was about to stop her from continuing her expose, or at least preventing her from saving it to the B drive. She emitted a high-pitched scream and then, after being bound and gagged and her password removed, she started to tell her amazing story to her captor(s).

Each company/organization will add one or two paragraphs to the story. Graphics may be added but the total contribution is not to exceed one page. Change the title to reflect the name of your company/organization and continue the story.

#### 3.2 Part Two - Edna Begins Her Story, By US Lynx

"Last fall there were persistent rumors about a shadowy SGML initiative code-named PEDS. No one was sure who was sponsoring the research, but a 'Deep Throat' kind of character called me one day to say that the system was undergoing a trial during a hot congressional race in Washington state. He said I could find out more about PEDS, which 'Throat' said stood for Political Exaggeration Detection and Sampling system, during an environmental rally in the Cascades. I thought I had to be there.

"Tempers were high at the rally, because a "Wise Use" proclearcutting group had shown up. As I was fighting my way through the screaming crowd, I saw a mousy woman suddenly appear as if from nowhere. The crowd parted to let her pass, a few "Wise Users" snickering, the environmentalists watching in awe. My God, it was the Log Lady!

"And she was cradling not a real branch, but a compressed sawdust fireplace log, like the ones city folks buy for their very expensive fireplaces. Trailing behind the Log Lady was a faint aura, at the edge of which I thought I saw the sweep of an ermine cape.

"She came straight to me and looked searchingly into my eyes. 'I sense you work for the government. Let me tell you what's been happening since the Twin Peaks crew left me in the woods with that owl,' she began. I asked, 'Does it involve that nebulous shape standing behind your shoulder?' 'You must be psychic,' she whispered with rising excitement. 'Two weeks ago, in the woods, I was visited by an apparition of Elvis, and he hasn't left me alone since then.' Ba-ba-booey!

"A sudden rush of wind trembled the trees. I couldn't suppress a shiver. For the past few months reports had come to my office of dead Elvises appearing to cows throughout the Midwest and upsetting their milk production by crooning 'Love Me Tender' for hours. And here was another Elvis. Ba-ba-booey!!!

"The Log Lady lowered her voice conspiritorially and told me that Elvis had been warning her about a little man with big ears from Texas and his sidekick Yimbo. (I knew that Yimbo and he reminded me less of Tonto than Gomer.) 'He has something to do with what Elvis calls PEDS or PEZ – some kind of electronic response system – and has a DDT or DTD that he's fiddling with.' But there her information ended. The rally seemed to go on forever and not even when Willie Nelson gave us a ten-song set did anyone else approach me. I felt frustrated, night had fallen, and I told the Log Lady I needed to leave. She (and Elvis) wanted a ride down the road. Back at my rented 4X4 Log Lady and Elvis had a brief scuffle over who got to sit in front; Log Lady won.

"Her (their) motel was positively Batesian. Log Lady didn't take to brief goodbyes, and I guess my impatience was showing because suddenly she seemed to melt into mist before my eyes. I blinked but she was really gone. And Elvis? Sitting in the dark backseat grinning a little. He said, 'Just a sample of virtual reality projection with a psychological kicker added; you wanted to see her.' And he too began to fade, until all one saw was that famous Cheshire cat grin (the stamp!). Oh Elvis, you cyber-chunk, I thought.

"I was about to speed away, but I noticed something glowing on Elvis's seat. I picked it up and saw it was a cassette labeled 'Unpublished Beatles Songs.' Was this Elvis' secret taste in music or did this unpublished Beatles song hide a secret about the PEDS project. like 'Revolution Number Nine' played backward? Why was Elvis appearing all over the country and why was he projecting out the Log Lady, with her warnings about the dwarf from Dallas? What did this dwarf know about the secret PEDS project and who was running it? Questions and more questions. For answers, I leaned forward to push the tape into the player. Something hit me from behind and I blacked out."

# 3.3 Part Three - Blood, Blood, and more...Blood, by Data Conversion Laboratory

I came to slowly, dried blood sticking my eyeballs to the steering wheel. I pulled back slowly, my vision was a bit foggy, but I could make out the huge blood stain on the cassette player, the seat cushion, and the still semi-viscous blood puddle on the dash.

Blood dripped from the already-coming-loose-again-ceiling fabric, and it dripped from the door handles and window buttons, and it felt wet and dry, and wet and dry on my stomach where my blood soaked crew-neck shirt blew back and forth in the slight breeze.

#### EXPO92 DEMO

My first thoughts were, is this my blood? Where did I get all this blood? I don't recall having that much blood. And if not my blood, whose?

As my vision started clearing up, I began to notice something strange. The blood stain on the seat cushion had formed what appeared to be a numeric string. Two of the digits were hard to make out, but as the blood dried, it became obvious to me

that the number 38784 appeared on the seat. Still partially dazed, I thought to myself that I'd seen that number before, but couldn't remember where or when. But deep in my gut I knew that this was the key that would help me answer my continually growing list of questions.

Add your part of the story starting here..